[029] Fig. 3 represents a shifting diagram for the multi-step reduction gear transmission of the invention in accordance with Fig. 1 and Fig. 2; [[and]]

[030] Fig. 4 represents a schematic view of a further, preferred embodiment of a multi-step reduction gear transmission of the invention[[.]]; and

Fig. 5 is a diagrammatic view of an embodiment of the multi-step reduction gear transmission having a differential;

Fig. 6 is a diagrammatic view of an embodiment of the multi-step reduction gear transmission with a clutch element and a motor;

Fig. 7 is a diagrammatic view showing the multi-step reduction gear transmission located between a starting element and a motor;

Fig. 8 is a diagrammatic view of the multi-step reduction gear transmission for a front-transverse installation with a motor;

Fig. 9 is a diagrammatic view of an embodiment of the inventive multiple gear transmission having a motor and a damper;

Fig. 10 is a diagrammatic view of the multi-step reduction gear transmission with a power take off for an additional unit;

Fig. 11 is a diagrammatic view of the multi-step reduction gear transmission having a free wheel;

Fig. 12 is a diagrammatic view of the multi-step reduction gear transmission with an electric machine; and

Fig. 13 is a diagrammatic view of the multi-step reduction gear transmission having a retarder.

[032] Fig. 1 shows a multi-step reduction gear transmission of the invention with a drive shaft 1 (An) and an output shaft 2 (Ab), which are arranged in a housing G. Three single rod planetary gears (gear sets) P1, P2, P3 are provided. Hereby, the first planetary gears P1 and the third planetary gears P3 are constructed as positive planetary gears. The second planetary gears P2 is constructed as negative planetary gears in accordance with the invention. It is also possible, that the second planetary gears P2 and the third planetary gears P3 are combined as Ravigneaux planetary gears with common rod (planet carrier) and common annulus.

[042] It is possible in accordance with the invention, as shown in Fig. 11, to provide a ~~additional~~ free wheel[[ings]] 42 at each suitable position of the multi-step reduction gear transmission, for example, ~~to be connected~~ between a shaft 66 and the housing G or about two shafts if need be.

[043] Moreover it is possible through the mode of construction of the invention, to arrange the drive and the output on the same side of the transmission or the housing preferably for transverse, frontal, longitudinal, back longitudinal or all-wheel arrangements. Moreover, an axle differential and/or a distributor differential 20 can be arranged on the drive side or, as show in Fig. 5, on the output side of the transmission.

[044] [[The]] As show in Fig. 6, the drive shaft 1 can be separated by a clutch element 24 from a drive motor 26 as needed within the framework of an advantageous further development, whereby a hydrodynamic converter, a hydraulic clutch, a dry starting clutch, a wet starting clutch, a magnetic powder clutch, or a centrifugal force can be used as the clutch element. It is also possible to arrange a starting element 28, as show in Fig. 7, of this type behind the transmission in the flow of force direction, whereby in this case the drive shaft 1 is continuously connected with the crankshaft 32 of the motor 26. Additionally, the drive shaft 1 can be permanently connected with the crankshaft 32 of an engine or drive motor 26, as show in Fig. 8.

Starting ~~The start~~ up, according to the invention, can take place using a shifting element of the transmission. Preferably the brake 04, which is activated in the first forward gear, as well as in the first reverse gear, can be used.

[045] The multi-step reduction gear transmission of the invention moreover enables the arrangement of a torsion vibration damper 34 between the motor 26 and the transmission, as shown in Fig. 9.

[046] A wear-free brake 44, as shown in Fig. 13, such as, for example, a hydraulic or electric retarder or the like, can be arranged on any shaft, preferably on the drive shaft 1 or the output shaft 2, which is especially of significance for use in commercial motor vehicles within the framework of a further, not represented embodiment. Furthermore, as shown in Fig. 10, an auxiliary output can be provided preferably on the drive shaft 1 or the output shaft 2 for driving an additional unit[[s]] 36 on each shaft.

[048] A further advantage of the multi-step reduction gear transmission presented here, as show in Fig. 12, consists in that an electric machine 40 can be installed on each shaft 66 as generator and/or as additional drive machine.